

# TCC engineering students win first place with robot car

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THE VIRGINIAN PILOT

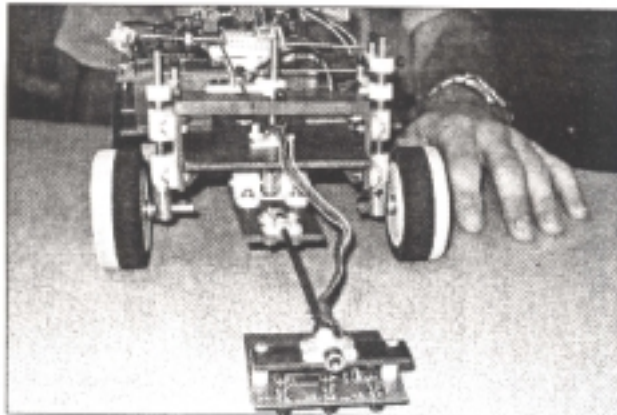
Tidewater Community College Engineering Club students and advisors were given a mission: Build a car no larger than 5 inches high by 7 inches wide and 15 inches long — or less.

Not only did they complete the task, all within the allotted budget of \$350. They also won first place for their automobile, named Murphy's Law, at the 2004 annual convention of the American Society for Engineering Education.

The competition, June 21 in Salt Lake City, set the rules for the little battery-operated vehicles, which were required to complete two laps around a figure-8 track with peaks and valleys.

Scoring was based on speed, completion of the course and on a presentation by students to the panel of judges.

It took several months to



Stephen Work places his hand beside Murphy's Law, the vehicle that Tidewater Community College Engineering Club students constructed and raced in a national competition.

come up with a plan. "There were many revisions and headaches," said Steve Ezzell, one of two TCC faculty members who formed the club 10 years ago. He lives in Suffolk.

For three months, club members tried several differ-

ent systems using Legos.

"It was just like the real world," said Paul Gordy, of Kempsville, who helped form the club. "We had restraints and had to consider money, speed and weight."

Student Stephen Work, 26, of

Little Neck, was team captain for the project.

Work is studying electrical engineering at Virginia Tech. "I want to do some work with robotics, used in things as large as autos and as tiny as robots used for exploring inside the human body," he said.

He defined robotics as simply "something that receives a command from us and then it gives a command to an electric system."

The vehicle, powered by one ordinary 9-volt battery and eight 1.2-volt batteries, has eyes, or in the words of those in the know, optical sensors. These sensors ride about a quarter of an inch from the track and follow a "road," made of black electrical tape.

It runs on a plywood track that looks like it is accordion-folded twice with a hump running lengthwise in the center. The car had to do a figure-8 route, quickly, in spite of turns, valleys and peaks.

The PVC body is split across the front one third or so, enabling the vehicle to twist and bend while navigating the uneven roadway, Work said.

In all, it is put together with nuts and bolts, foam wheels, a pingpong ball, glue, a toggle switch, nylon steering arms, a circuit board, resistors, transistors, capacitors, a sensor, diodes and two motors. Remote controls are not allowed.

The total cost: \$268.59, well under budget.

The club received a \$1,000 donation from the local chapter of the National Society of Professional Engineers.

This is the sixth year the club has competed. Students have gone to Charlotte, St. Louis, Albuquerque, Montreal, Nashville and Salt Lake City and have netted three first-place finishes and twice placed third.

The team included Brandon Simpkins, 19, of Virginia Beach; Keith Owen, 38, of Portsmouth; and Alton Davis.